BOREHOLE ACOUSTIC SOURCE

Abstract

The present invention discloses an acoustic borehole source and method of using the source for generating elastic waves through an earth formation that may be used for logging (such as by wireline) or permanent installations. In one embodiment, the acoustic source is comprised of a first motorized reaction mass and at least two pads, each pad connected to the sonde and the motorized reaction mass using pushing rods. To ensure proper positioning within the borehole, the sonde is anchored against the borehole wall using at least two of the pads or using a separate anchoring means. In a second embodiment, an acoustic borehole source is comprised of a first and second motorized reaction mass and at least two pads. The motorized reaction masses may be preferentially activated to allow the pads to move at an angle α relative to the axis of the sonde. In a third embodiment, the acoustic borehole source includes additional pairs of motorized reaction masses so that pads may be independently, preferentially activated.